

Psyche Team Guidelines

SIGNATURE PAGE

Approved by:

Linda Elkins-Tanton, Psyche PI Date

Carol Polansky, Psyche Project Scientist Date

James Bell, Psyche Deputy PI Date

Sarah Noble, Psyche Program Scientist Date

Concurred by:

David Lawrence, GRNS Instrument Lead Date

Christopher Russell, Magnetometer Development Lead Date

Benjamin Weiss, Magnetometry Investigation Lead Date

Maria Zuber, Gravity Science Investigation Lead Date

CHANGE LOG

| DATE | SECTIONS CHANGED | REASON FOR CHANGE | REVISION |
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1. Introduction

1.1. Purpose

The purpose of this document is to govern data rights for the Psyche mission and to ensure the orderly conduct in the dissemination of information resulting from Psyche science investigations and engineering achievements. This plan serves to define the responsibilities, privileges, and expectations of Co-Investigators (Co-Is) and other team members. It provides for the proper use of the data generated by the Psyche mission and proper means of communication of scientific results, engineering achievements, and mission-related news. Everyone on this mission must work together to satisfy the mission objectives. It is the responsibility of all team members to maintain the highest scientific and ethical standards in the collection, analysis, and dissemination of data and information.

1.2. Scope

This plan is an agreement among Psyche team members and collaborators (i.e., those listed in sections 6.1 and 6.2) starting from now and extending until the end of the closeout phase (Phase F) of the mission, or nine months after the end of the Primary mission or any Extended mission. This plan applies to all phases of the Psyche mission, all data returned from the mission, and any laboratory, ground-based or orbital data collected in direct support of Psyche by Co-Is or other team members. In the case of an Affiliate team member or Collaborator, the Co-I supervising their work is responsible for their adherence to the Team Guidelines.

1.3. Revisions

This plan will be revised as needed to accommodate changes in the Psyche mission. Revisions may be proposed by any team member, and require the approval of the Principal Investigator (PI) and the Psyche Program Scientist. Any changes to the list of Co-Is also requires approval of NASA HQ (see section 2.3). Changes to the list of other project personnel require PI or DPI approval only. The PI and/or DPI will ensure that proper procedures are followed regarding addition and removal of team members.

1.4. Related and reference documents

The following documents form a part of this specification to the extent specified herein.

- *Program Level Requirements Appendix (PLRA)*
- *Communication Plan*
- *Science Data Management Plan*

2. Psyche team

2.1. Roles

Principal Investigator (PI): The mission PI is responsible for overall Psyche mission success, and for the scientific integrity and execution of the mission within committed cost and schedule. The PI oversees the team organization, arbitrates science priorities and progress, and oversees the delivery of mission data sets to the Planetary Data System (PDS). The PI is the ultimate decisional authority on the Psyche team. The PI is responsible for ensuring that all mission participants are able to exercise the rights and execute the responsibilities laid out by their role's definition or by the Team Guidelines, and also that no additional responsibilities are assigned that interfere with their existing rights or responsibilities.

Deputy PI (DPI): The DPI assists the PI where needed in managing relationships among the many elements of the project and the science investigators. The DPI can take on decisional authority for the PI when so directed.

Project Scientist (PS): The PS is a Co-Investigator representing the PI, who is embedded in the day-to-day activities and decision making of the project. The Project Scientist reports directly to the PI and works closely with the Project Manager. The Project Scientist supports the PI by maintaining cognizance of all aspects of the mission in interactions with the Project Manager and the project team as well as maintaining cognizance of science experiments, science planning and operations, and data acquisition, reduction, and analysis in interactions with the science team.

Co-Investigator (Co-I): Co-Is receive direct support from NASA for their role on the mission and are responsible to the PI for the execution of their assigned roles. Co-Is are directly responsible for the data acquisition or data analysis required to satisfy one or more of the Level-2 science requirements. The Co-Is of the Psyche science team are active participants in all aspects of mission implementation. These positions come with many privileges and responsibilities, including adhering to these Team Guidelines. Co-Is are responsible for funding Team Affiliates with mission funds and for ensuring that their sponsored Affiliates and Collaborators adhere to the Team Guidelines.

Affiliate: A Team Affiliate is a person who is a member of the science team through the sponsorship of a Co-I or the PI/DPI. The Team Affiliate receives funding through their sponsoring science team member, and is responsible to that person both for adhering to the Team Guidelines and for executing their assigned tasks.

Participating Scientist: Any scientists selected by NASA to be part of a Participating Scientist Program (PSP) team will also be Psyche team members. Principal investigators of PSP awards shall be designated as Participating Scientist Co-Is. Such Co-Is have the same privileges and responsibilities as other Co-Is and are subject to these team guidelines. Other scientists who are team members of PSP awards shall be Participating Scientist Collaborators and are subject to these team guidelines, as are other Collaborators. All scientists who join the Psyche team through PSP awards shall maintain their status in the mission and be bound by these team guidelines until their mission work is complete, including all publications and other required mission data products.

Collaborator: The Collaborators of the Psyche science team are team members who work in support of team activities but are not paid by the project. Each collaborator must be specifically associated by name and under the management of an individual Co-I who is responsible for ensuring that they adhere to these guidelines. Collaborators are typically people who work closely with a Co-I and provide important support that enhances the science return from Psyche. Collaborators may either be specifically named on selected proposals or as-yet unnamed students, postdocs, and technical staff working with team members. Collaborators are brought into the science team for specific periods of time for technical support or to perform research of interest to the mission team.

Student Collaborator: Any graduate or undergraduate student working in support of team activities, including Psyche Interns. Each Student Collaborator must be associated with and under the management of a specific Psyche team Co-I or other team member who is responsible for ensuring that they adhere to these guidelines.

The Science Community: The “science community,” for the purposes of this document, is defined to be all scientists who are not Psyche team members.

2.2. Organization

The Psyche science team is organized in two tiers to support both the science objectives of the mission as well as the instrument investigations. The organization is shown in Figure 1.

Science Objective Working Groups: The Psyche science objectives are by nature interdisciplinary, integrating results from multiple instrument investigations. The top tier of Figure 1 shows five interdisciplinary Working Groups that map directly to these five science objectives to answer the key questions about Psyche: A) identification as a core; B) relative ages of surface units; C) light elements in a core; D) oxidizing/reducing conditions at core formation; and E) morphology of a metal world. This team structure encourages collaboration and data sharing throughout the project lifecycle. Each working group is chaired by a science team Co-I who is not responsible for an instrument science investigation.

Instrument Science Investigations: The science team is also organized into six teams dedicated to the instruments, numerical modeling, and data archive. This classic planetary-mission science-team organization assures that each instrument meets its committed performance requirements, operates in support of the science mission profile and delivers calibrated data into PDS, and delivers measurement-specific analyses to the overall investigation. Unlike the other groups, the modelers do not have a formal leadership structure. The Data Archive Working Group is chaired by the mission Archive Scientist.

Membership in each of these groups is approved by the group leader and the PI.

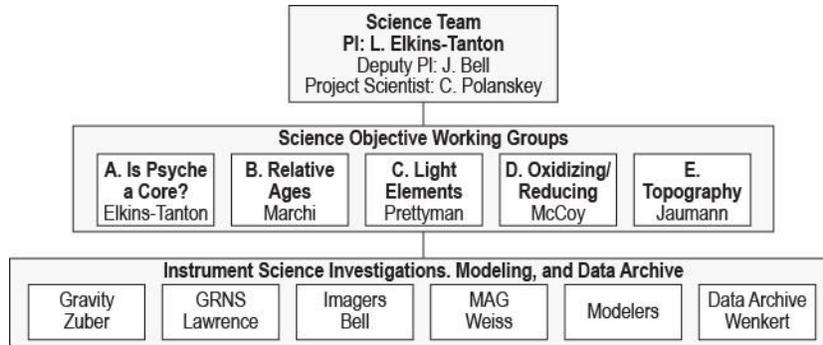


Figure 1. Instrument Investigations (bottom tier) assure calibrated, performant data. Science Objectives Working Groups (top tier) synthesize data analysis from multiple instruments to deliver the five science objectives (A–E).

2.3. Addition of Team Members

Regular Co-Is: Regular (non-PSP) Co-Is may only be added with the approval of the PI and NASA HQ, following established procedures.

Process to add a Co-I:

1. The PI sends a letter to the SMD Program Scientist. The letter requests that a new Co-I be added, gives the rationale and any impact (*e.g.*, will it cost more money), and includes a CV of the proposed new Co-I and other background documentation as appropriate.
2. The Program Scientist forwards a package to the Chief Scientist, via the Division Director, that includes (a) a short memo of request from the Program Scientist to the Chief Scientist, (b) a letter for the AA's signature to the PI/Project Scientist approving the appointment, and (c) the package described in part (1) as background information.
3. The Chief Scientist recommends the appointment and passes the package to the AA for signature.
4. The AA signs the letter.

Collaborators: The Psyche PI has the authority to approve Collaborators. Nominations for new Collaborators must be made by a Co-I. Nominations must include the proposed scientific contributions of the candidates to Psyche as well as their qualifications to make the contributions. Nominations for Collaborators should also include a proposed duration for the appointment. The Psyche DPI and Project Scientist will review nominations and make recommendations to the PI.

PSP Co-Is and Collaborators: Selections of new PSP Co-Is and their Collaborators will be made by the NASA HQ Research and Analysis Program Lead Scientist, on the recommendation of the Psyche Program Scientist. Additions of Collaborators to be associated with existing PSP Co-Is shall be made by the Program Scientist. In unusual circumstances, replacement of a PSP Co-I may also be made by the Program Scientist.

Engineers: Given the long duration of Psyche, it is likely that members of the engineering team will join and leave the team regularly. These decisions are made by the home institution of the team

members. It is expected that the team roster (see appendix A) will be maintained and regularly updated to document the current membership of the Psyche team.

2.4 Evaluation and Change in Status of Team Members

The PI will evaluate all regular (non-PSP) members of the Psyche Science Team on a regular basis to realign their roles, responsibilities, and resources with upcoming mission challenges. Co-Is may leave the project and relinquish their Co-I status by mutual agreement with the PI (*e.g.*, resignations, retirement, etc.). Co-Is could lose their status on the mission based on recommendations from both the PI and the Program Scientist, as well as the Associate Administrator for Science.

If team members disassociate from the Psyche project (*e.g.*, by removal, resignation, or expiration of their term) they may not prepare or submit papers based on unreleased Psyche data or otherwise release data to which they have had privileged access, until those data are released to the public.

3. Data Rights and Responsibilities

3.1. Data sharing within the Psyche project

Each investigation will provide processed data products, as soon as they are ready, for project-wide distribution via the Psyche Science Data Center to the entire science team and to the engineering operations teams. This is expected to be important for several reasons, including (1) guiding operations, (2) strategic planning, which will require constant iteration based on knowledge of the full range of results across all investigations, and (3) maximizing the scientific benefit of the integrated Psyche mission (*i.e.*, immediate data sharing across the entire science team will help with full interpretation of the data from all instruments).

It will be the responsibility of individual team members to distribute data and data products in a timely fashion to their Collaborators. Note that it is expected that data processing and interpretation will evolve (*e.g.*, from provisionally analyzed to fully validated and archival data), and improved data products and interpretations will also be distributed within the project as they become available. As a general rule, any Psyche data products (including calibration data) will be made available to any Psyche team member or Collaborator. The Psyche Science Data Management Plan defines the data products to be produced and distributed within a prescribed timeline.

3.2. Data sharing with the science community

It is NASA policy that investigators do not have exclusive use of data taken during the course of their investigation for any proprietary period. However, it is recognized that some time is required (no more than six months for the Psyche project, and as brief a period of time as possible) for data products to be generated and validated. Consistent with this, instrument leads will be responsible for delivery of assembled and validated Psyche data product volumes (Level 0 and 1 data, associated ancillary information, calibration data and information, and higher-level calibrated data products) to the PDS no more than six months after receipt on Earth. Archive volumes will be PDS4-standards compliant. The documentation delivered to PDS that describes the higher-level products must include a complete

description (techniques, algorithms, calibration measurements, and/or software when practical) such that a reasonably skilled end user has enough information to fully understand and reproduce any scientific results derived from the data products.

Before delivery to the PDS, no data products shall be released to the science community other than results contained in scientific publications (or supplemental data associated with such publications) or products released to the general public as described in the Psyche Science Data Management Plan and this Team Guidelines document. The importance of this cannot be overemphasized, and all team members and collaborators must be especially vigilant on this point. We want everyone to be comfortable with complete openness within the project with respect to unpublished or incompletely processed or interpreted results. Therefore, we must be especially careful not to violate the confidentiality of the group by broadcasting (even inadvertently) preliminary or incomplete interpretations from these hard-won data. An exception is that selected results may be released to specifically chosen members of the community on an as-needed basis in order to enable their participation in the project when no team members or collaborators with adequate expertise are available (e.g., unanticipated results are encountered and no pre-selected team members or collaborators are experts in the area or have the time to devote to the new task); they must agree to adhere to these guidelines and all such releases must be approved by the Principal Investigator, after consultation with the Co-Is responsible for the data and/or the Science Team.

3.3 Data release to the general public

To engage the public, the Psyche Science Team will release subsets of recent particularly interesting data or data products from each of the science instruments in a timely fashion. In addition, NASA, through the Psyche project office, reserves the option to release or to direct the release of data or data products in support of public engagement.

At the discretion of NASA Headquarters or the PI, short-term embargoes on particular data releases might occasionally be put in place (for example, in order to maximize the impact of a specific press conference or to comply with a particular journal publisher's embargo policy), but such embargoes are expected to be exceptions rather than the rule.

4. Publications

“Publications” refer to any written publication, including abstracts and conference proceedings, relating to the Psyche mission. This includes mission-enhancing/-enabling work, such as lab studies, supported by the project. Geologic maps are also considered publications.

Although informal names may be used tactically when discussing features of interest, the science team should seek agreement on terminology and must adhere to IAU-approved feature names and body-specific references in all publications when those are available.

NASA is committed to following Federal guidelines that all data from federally funded research should be made as widely and freely available as possible. All publications produced by team members must

adhere to the letter and spirit of the NASA Plan for Increasing Access to the Results of Scientific Research: ([https://www.nasa.gov/sites/default/files/atoms/files/206985_2015_nasa_plan-for-web.pdf](https://www.nasa.gov/sites/default/files/atoms/files/2069852015_nasa_plan-for-web.pdf)).

4.1 Restricted Publications

Any team member intending to produce a written publication that is (a) funded by the mission, (b) based on mission data that have not yet been released to the scientific community, **or** (c) based on mission data that have been released for less than six months, shall inform the relevant Working Group lead or the PI when plans for the work are just past the conception stage, or, for PSP Co-Is, upon selection. Once a mature version of the publication is produced, the authors will provide the PI with a copy for final circulation to the team prior to release to any person outside the team. In addition, publications that are contractual deliverables to the mission must always be submitted to the PI.

Release of a student's thesis is similar to publishing a journal article, with respect to these team guidelines. Before a student defends their thesis, and before releasing it to faculty/other non-team members, the results of their research should be presented to the full science team.

The goal of all team members at all times must be excellent quality of work. Great care should be taken to produce only polished, complete, rigorous work.

4.2 Open Publications

Any team member intending to produce a written publication that is relevant to the mission but does not meet any of the criteria (a-c) above should inform the PI when the plans for the work are just past the conception stage and provide a copy of the publication to the PI prior to submission.

4.3 Newsworthy Publications

Any publication produced by a team member that is likely to be newsworthy, including publications which do not meet any of the criteria (a-c) above, should not be released or shared beyond the team or discussed in public until a communications plan is in place as specified in the *Psyche Communication Plan*, or the publication is deemed not to be newsworthy. In the latter case, the publication may proceed according to the guidelines above.

4.4 Publication of Geologic Maps

Geologic maps produced by the Science Team with support from the mission will be published through the U. S. Geological Survey (USGS), following USGS guidelines and standards, when it is scientifically appropriate to do so, and when doing so does not unduly delay release of the scientific results contained in the map.

4.5 Authorship Guidelines

Authorship for all publications is open to all team members and collaborators, according to the following conditions:

- Any team member who is writing a Psyche paper should circulate the draft or concept to the whole team, inviting participation and comments;

- Any team member who asks to be an author of any paper and who makes a substantive contribution to that paper (*i.e.*, to the writing and/or to the research reported in the paper) shall be an author; and
- Any Collaborator who is invited by a team member to be an author on a paper and who makes a substantive contribution to that paper (*i.e.*, to the writing and/or to the research reported in the paper) shall be an author.

In case of any disputes, final decisions on authorship, including either the inclusion or exclusion of people from the author list and the order of authors, will be made by the PI, in consultation with the DPI and Project Scientist, and others on the team as needed. The appropriate authorship of papers will likely evolve during their preparation; the science-team-approved lead author of each paper will have access to the science team to discuss issues of concern and will be responsible for keeping the science team informed as to appropriate changes in authorship. The science team will likewise be responsible for keeping the full project membership informed of all ongoing and anticipated publications.

As described in section 3.2, members of the science community may be authors (including lead authors, where appropriate) of a project-sanctioned paper only if:

- their participation on the paper (including the research leading up to the paper) has been pre-approved by the PI based on a request from a team member; as described in section 3, approval by the PI will be based on the judgment that the outside scientist brings to the investigation some unique and necessary capability not possessed by any team member or Collaborator (or appropriate team members or Collaborators are unwilling or unable to perform the work); and
- they make major substantive contributions to the investigation and/or to the writing of the paper, also
- they must adhere to these Team Guidelines.

4. Communication Plan

All team members are required to abide by the rules set forth in the *Psyche Communication Plan*.

5.1. Science team meetings

Team meetings are expected to be open and collaborative environments where ideas can be freely exchanged. It is imperative that team members feel comfortable discussing ideas and unreleased results at science team meetings. To achieve this, it is critical that team members are careful not to intentionally or unintentionally communicate unreleased results outside the science team, as described in section 3.2.

5.2. Conference presentations

It is anticipated that results of the Psyche investigation will be presented in forums such as scientific conferences. The science team will have the responsibility to oversee and coordinate these presentations, and team members and collaborators wishing to make such presentations should request

authorization from the science team, leaving at least a week for advance approval. Authorship rules for such professional scientific presentations that take place within the time period covered by this document will be identical to those for peer-reviewed papers as stated in section 4.3. For abstracts where it is appropriate for all team members to be coauthors but length limits prevent all from being listed, the phrase “the Psyche Science Team” should be used. All abstracts and presentations should be posted on the team website as soon as they become available. A student’s thesis defense presentation with open attendance is similar to a conference talk.

5.3. Informal talks

Once a team member has been approved by the PI to speak about Psyche, they may represent the mission at public engagement events. The speaker must notify the PI at least 3 days in advance and must report the appropriate outreach metrics to the database. These presentations should not include data or results that have not previously been published (or distributed as part of a public release), archived in the PDS, or discussed at a scientific conference or workshop that included attendees not associated with the Psyche Science Team. The Psyche team web site will maintain updated copies of slides and other materials suitable for use in public engagement events. All team members are encouraged to participate in media training opportunities.

5.4. Use of social media

Members of the Psyche team are encouraged to use personal social media accounts to communicate Psyche stories to the public. However, team members’ personal social media accounts should never be used to release as-yet unreleased Psyche news. If newsworthy communications are required, the guidelines described in the Communication Plan must be followed to develop an appropriate plan for the communication involving official platforms consistent with NASA policy. Once newsworthy information about the Psyche mission has been approved for release, it may be posted on social media platforms. In situations where team members are unclear about whether certain information or stories should be shared via social media channels, they are encouraged to seek the PI’s advice and decision.

5.5. Interaction with media outlets

Media releases and other Public announcements: A media release will be issued when a significant scientific discovery or mission event warrants a high-level announcement. NASA HQ Office of Communications will make the final determination on news items to release and whether a product will be issued by Headquarters, JPL, or ASU. Generally, an accepted, peer-reviewed science paper or major mission event is required for a media release. The Psyche Communication Plan details the approval process for media releases.

Unsolicited contact by media outlets: If you are contacted by a journalist, you are strongly encouraged to contact your local public affairs office before responding. Your PAO officers are your friends and are there to support and protect you and the mission. In addition, for high-visibility news outlets (e.g. NYT, national news, etc), NASA HQ public affairs should also be looped in.

Appendix A. Personnel list

This list will be updated at regular intervals and was last updated on 12/7/2017. The current roster can always be found online at

<https://app.smartsheet.com/b/publish?EQBCT=a94e117275a64b65b4fe94b22baeb2c7>

If there are errors in the online roster, please provide corrections to Carol Polansky, carol.a.polansky@jpl.nasa.gov

| Role | Name | Affiliation | Email |
|---|---------------------|-------------|-----------------------------------|
| Project Management | Henry Stone | | |
| Project Manager | Henry Stone | JPL | Henry.W.Stone@jpl.nasa.gov |
| Deputy Project Manager | Robert Mase | JPL | Robert.A.Mase@jpl.nasa.gov |
| Project Staff Assistant | Hardy Fuller | JPL | Hardeep.K.Fuller@jpl.nasa.gov |
| Business Manager | Brian Johnson | JPL | Brian.A.Johnson@jpl.nasa.gov |
| Project Resource Analyst (PRA) | Lupe Pacheco | JPL | lupe.pacheco@jpl.nasa.gov |
| Project Schedule Analyst (PSA) | Darryl Brown | JPL | darryl.brown@jpl.nasa.gov |
| Task Plan Contract Administrator | Doug Gilbertson | JPL | Douglas.S.Gilbertson@jpl.nasa.gov |
| JPL Subcontract Manager for SSL | Trena Mims Humphrey | JPL | trena.m.mims@jpl.nasa.gov |
| JPL Subcontracts Manager for UCLA/APL | Lauren Fernandez | JPL | Lauren.Fernandez@jpl.nasa.gov |
| JPL Subcontracts Manager for UCLA | Gabe Obregon | JPL | gabriel.obregon@jpl.nasa.gov |
| Launch Approval Engineer | Jan Graham | JPL | janis.u.graham@jpl.nasa.gov |
| | | | |
| Project System Engineering | David Oh | | |
| Project System Engineer | David Oh | JPL | david.y.oh@jpl.nasa.gov |
| Deputy Project System Engineer | Tracy Drain | JPL | Tracy.D.Drain@jpl.nasa.gov |
| Project System Engineering | Bill Hart | JPL | William.Hart@jpl.nasa.gov |
| Project System Engineering | Karen Lum | JPL | Karen.T.Lum@jpl.nasa.gov |
| Project System Engineering | Ashley Williams | JPL | ashley.a.williams@jpl.nasa.gov |
| Project Software Systems Engineer | Steve Larson | JPL | steven.a.larson@jpl.nasa.gov |
| End to End Information Systems (EELS) | Robert Moore | JPL | robert.r.moore@jpl.nasa.gov |
| Information & Configuration Management (IMCM) | Joshua Hein | JPL | joshua.c.hein@jpl.nasa.gov |
| Information & Configuration Management (IMCM) | Natalie Blackway | JPL | natalie.e.blackway@jpl.nasa.gov |
| Information & Configuration Management (IMCM) | Mary Behshid | JPL | mary.m.behshid@jpl.nasa.gov |
| Export Compliance | Devon Meinhardt | JPL | Devon.J.Meinhardt@jpl.nasa.gov |
| Planetary Protection (Outgoing) | Roy Park | JPL | hyung.i.park@jpl.nasa.gov |
| Planetary Protection (Incoming) | Parag Vaishampayan | JPL | Parag.A.Vaishampayan@jpl.nasa.gov |
| Contamination Control | Stephen Liao | JPL | Stephen.Liao@jpl.nasa.gov |
| Contamination Control | Anthony Wong | JPL | anthony.t.wong@jpl.nasa.gov |
| Launch Systems Engineer | Peter Darus | JPL | Peter.J.Darus@jpl.nasa.gov |
| Project V&V | Ben Solish | JPL | Benjamin.S.Solish@jpl.nasa.gov |

Psyche Team Guidelines

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| GRC SEP Support | Carol Tolbert | GRC | |
| Mission Assurance | Rob Menke | | |
| Mission Assurance Manager | Rob Menke | JPL | robert.j.menke@jpl.nasa.gov |
| Safety | James Seastrom | JPL | James.W.Seastrom@jpl.nasa.gov |
| Environments Engineering | Shirley Hart | JPL | shirley.hart@jpl.nasa.gov |
| Magnetic Control Lead | Katherine Dang | JPL | Katherine.Dang@jpl.nasa.gov |
| Reliability | Kathy McKeon | JPL | katherine.r.mckeon@jpl.nasa.gov |
| EEE Parts | Nazia Ovee | JPL | nazia.ovee@jpl.nasa.gov |
| Hardware QA (outgoing) | Bruce Chandler | JPL | Bruce.R.Chandler@jpl.nasa.gov |
| Hardware QA (incoming) | Steve Alfaro | JPL | Stephen.Alfaro@jpl.nasa.gov |
| Software QA | Emily Chen | JPL | Emily.Chen@jpl.nasa.gov |
| Science | Lindy Elkins-Tanton | | |
| Principal Investigator | Lindy Elkins-Tanton | ASU | lelkest@asu.edu |
| Deputy PI | | | |
| Imager Instrument Lead | Jim Bell | ASU | jim.bell@asu.edu |
| ASU Project Manager | Tess Calvert | ASU | tess.calvert@asu.edu |
| Project Scientist | Carol Polanskey | JPL | carol.a.polanskey@jpl.nasa.gov |
| Student Collaboration | Cassie Bowman | ASU | C.Bowman@asu.edu |
| Science Team Co-Is | | | |
| Collisional formation modeling | Erik Asphaug | UofA | asphaug@lpl.arizona.edu |
| Surface/interior geophysical processes | David Bercovici | Yale | david.bercovici@yale.edu |
| Gravity and geophysical modeling | Bruce Bills | JPL | Bruce.Bills@jpl.nasa.gov |
| Small body compositional/mineralogic | Rick Binzel | MIT | rpb@mit.edu |
| Solar system origin/evolution modeling | Bill Bottke | SWRI | bottke@boulder.swri.edu |
| Topography WG Lead | Ralf Jaumann | DLR | Ralf.Jaumann@dlr.de |
| Calibration and modeling of the 3He neutron spectrometer sensors | Insoo Jun | JPL | Insoo.Jun@jpl.nasa.gov |
| GRNS Instrument Lead | David Lawrence | APL | david.j.lawrence@jhuapl.edu |
| Relative Ages WG Lead | Simone Marchi | Smithsonian | marchi@boulder.swri.edu |
| Oxidizing/Reducing WG Lead | Tim McCoy | | MCCOYT@si.edu |
| Gravity Science Deputy Investigation Lead | Ryan Park | JPL | ryan.s.park@jpl.nasa.gov |
| Gamma-Ray Spectrometer Instrument Scientist | Patrick Peplowski | APL | Patrick.Peplowski@jhuapl.edu |
| Light Elements WG Lead | Tom Prettyman | PSI | prettyman@psi.edu |
| Magnetometer Operations Lead | Carol Raymond | JPL | carol.a.raymond@jpl.nasa.gov |
| Magnetometer Development Lead | Chris Russell | UCLA | ctrussel@igpp.ucla.edu |
| Determination of geophysical signature of impact craters | Mark Wieczorek | OCA | mark.wieczorek@oca.eu |
| Magnetometry Investigation Lead | Ben Weiss | MIT | bpweiss@mit.edu |

Psyche Team Guidelines

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|---|-------------------------------|------|--|
| Mission Archive Scientist. Data Archive WG Lead. | Daniel Wenkert | JPL | daniel.wenkert@jpl.nasa.gov |
| Geologic Mapping Lead and Deputy Imager Instrument Lead | David Williams | ASU | David.Williams@asu.edu |
| Gravity Science Investigation Lead | Maria Zuber | MIT | zuber@mit.edu |
| Science Team Collaborators | | | |
| Post-Doc for Lindy Elkins-Tanton | Laura Schaefer | ASU | lschaefer@asu.edu |
| Grad Student for Lindy Elkins-Tanton | Hannah Bercovici | ASU | hannah.bercovici@gmail.com |
| Grad Student for Lindy Elkins-Tanton | John Christoph | ASU | |
| Grad Student for Jim Bell | Steven Dibb | ASU | sdibb@asu.edu |
| Staff for David Lawrence | John Goldsten | APL | John.Goldsten@jhuapl.edu |
| Grad Student for Ben Weiss | Clara Maurel | MIT | cmaurel@mit.edu |
| Post-Doc for Ben Weiss | Rona Oran | MIT | roran@mit.edu |
| Post-Doc for David Bercovici | Elvira Mulyukova | Yale | elvira.mulyukova@yale.edu |
| Exec Assistant for Maria Zuber | Paul Schierenbeck | MIT | schieren@mit.edu |
| | | | |
| Payload | Kalyani Sukhatme | | |
| Payload Manager | Kalyani Sukhatme | JPL | kalyani.g.sukhatme@jpl.nasa.gov |
| Payload System Engineer Lead | Noah Warner | JPL | noah.z.warner@jpl.nasa.gov |
| Imager Instrument Engineer | Nikta Amiri | JPL | Nikta.Amiri@jpl.nasa.gov |
| GRNS Instrument Engineer (Outgoing) | Danielle Marsh | JPL | Danielle.M.Marsh@jpl.nasa.gov |
| GRNS Instrument Engineer (Incoming) | Zak Staniszewski | JPL | Zak.K.Staniszewski@jpl.nasa.gov |
| Magnetometer Instrument Engineer | Maria De Soria-Santacruz Pich | JPL | Maria.De.Soria-Santacruz.Pich@jpl.nasa.gov |
| DSOC Instrument Engineer | Marcus Wilkerson | JPL | Marcus.Wilkerson@jpl.nasa.gov |
| Multispectral Imager | Jim Bell | ASU | |
| Imager Instrument Lead | Jim Bell | ASU | jim.bell@asu.edu |
| ASU Instrument Manager | TBD | ASU | |
| ASU Business Manager | Stephanie Holaday | ASU | sholaday@asu.edu |
| Malin Space Science Systems | Mike Ravine | MSSS | |
| Gamma Ray and Neutron Spectrometer (GRNS) | David Lawrence | APL | |
| GRNS Instrument Lead | David Lawrence | APL | David.J.Lawrence@jhuapl.edu |
| GRNS Project Manager | Michael Cully | APL | Michael.Cully@jhuapl.edu |
| GRNS Lead Engineer | John Goldsten | APL | John.Goldsten@jhuapl.edu |
| GRNS Instrument Scientist | Patrick Peplowski | APL | Patrick.Peplowski@jhuapl.edu |
| GRS Sensor Lead | Morgan Burks | LLNL | burks5@llnl.gov |
| GRNS DPU Lead | Sam Fix | APL | Samuel.Fix@jhuapl.edu |
| Cryocooler Board Lead | David Do | APL | David.Do@jhuapl.edu |
| FPGA/Firmware Lead | Ramsey Hourani | APL | Ramsey.Hourani@jhuapl.edu |
| NS/GRS Instrument Engineer | Zach Yokley | APL | Zachary.Yokley@jhuapl.edu |
| Mechanical Design | Erin Hoffer | APL | Erin.Hoffer@jhuapl.edu |
| Scheduler | Dewey Barlow | APL | Dewey.Barlow@jhuapl.edu |

Psyche Team Guidelines

| | | | |
|---------------------------------------|-----------------------|------|------------------------------------|
| Financial Manager | Donald Streett | APL | Donald.Streett@jhuapl.edu |
| Documentarian | TBD | APL | |
| Thermal Design | TBD | APL | |
| Flight Software | TBD | APL | |
| Quality Assurance | TBD | APL | |
| MAGNETOMETER | Ben Weiss | MIT | |
| Magnetometer Instrument Lead | Chris Russell | UCLA | ctrussel@igpp.ucla.edu |
| Magnetometer Lead Engineer | Kathryn Rowe | UCLA | krowe@igpp.ucla.edu |
| Deep Space Optical Comm (DSOC) | Bill Klipstein | JPL | |
| DSOC Project Manager | Bill Klipstein | JPL | william.m.klipstein@jpl.nasa.gov |
| DSOC Project Technologist | Abi Biswas | JPL | Abhijit.Biswas@jpl.nasa.gov |
| DSOC Project System Engineer | Robert Smythe | JPL | Robert.F.Smythe@jpl.nasa.gov |
| DSOC Flight Delivery Manager | Clayton Okino | JPL | Clayton.M.Okino@jpl.nasa.gov |
| DSOC Flight System System Engineer | John Liu | JPL | John.Y.Liu@jpl.nasa.gov |
| DSOC System Engineer | Brian Schratz | JPL | brian.c.schratz@jpl.nasa.gov |
| DSOC Ground System System Engineer | Meera Srinivasan | JPL | meera.srinivasan@jpl.nasa.gov |
| DSOC Thermal | Arthur Na-Nakornpanom | JPL | Arthur.Na-Nakornpanom@jpl.nasa.gov |
| DSOC Mechanical | Michael Schein | JPL | Michael.E.Schein@jpl.nasa.gov |
| DSOC Photon Counting Camera | Andre Wong | JPL | Andre.Wong@jpl.nasa.gov |
| DSOC Laser | Malcolm Wright | JPL | Malcolm.W.Wright@jpl.nasa.gov |
| DSOC Electronics | Matt Flach | JPL | Matthew.P.Flach@jpl.nasa.gov |
| DSOC IPA Contract Manager | Gerry Ortiz | JPL | Gerardo.G.Ortiz@jpl.nasa.gov |
| DSOC Testbed | Joe Kovalik | JPL | Joseph.M.Kovalik@jpl.nasa.gov |
| DSOC I&T | Joe Kovalik | JPL | Joseph.M.Kovalik@jpl.nasa.gov |
| DSOC Flight Operations | | JPL | |
| DSOC Project Resource Analyst | Austin Love | JPL | austin.m.love@jpl.nasa.gov |
| DSOC Scheduler | Mandy Branam | JPL | Amanda.C.Branam@jpl.nasa.gov |
| DSOC Mission Assurance | Steve Watson | JPL | Stephen.H.Watson@jpl.nasa.gov |
| DSOC Downlink Receiver Electronics | Ryan Rogalin | JPL | Ryan.Rogalin@jpl.nasa.gov |
| DSOC Downlink Detector | Matt Shaw | JPL | Matthew.D.Shaw@jpl.nasa.gov |
| DSOC L3-SSG Subcontract | Dan MacDonald | JPL | |
| | | | |
| Flight System | Mark Brown | | |
| Flight System Manager | Mark Brown | JPL | G.M.Brown@jpl.nasa.gov |
| Flight System Systems Engineer (FSSE) | Kevin Barltrop | JPL | Kevin.J.Barltrop@jpl.nasa.gov |
| Spacecraft Chief Engineer | Dan Goebel | JPL | Dan.M.Goebel@jpl.nasa.gov |
| Flight System Systems Engineering | Bill Hart | JPL | William.Hart@jpl.nasa.gov |
| Flight System Systems Engineering | Nitin Arora | JPL | Nitin.Arora@jpl.nasa.gov |
| Fault Protection | Danielle Marsh | JPL | Danielle.M.Marsh@jpl.nasa.gov |
| Electric Propulsion Support | Steve Snyder | JPL | john.s.snyder@jpl.nasa.gov |
| Electrical Systems Design | Alex Jimenez | JPL | Alejandro.Jimenez@jpl.nasa.gov |

Psyche Team Guidelines

| | | | |
|--|---------------------|-----|------------------------------------|
| Power | Greg Carr | JPL | Gregory.A.Carr@jpl.nasa.gov |
| Avionics PDM | Bonnie Theberge | JPL | Bonnie.C.Theberge@jpl.nasa.gov |
| Flight Software | David Hecox | JPL | David.S.Hecox@jpl.nasa.gov |
| C&DH Equipment Lead (Outgoing) | Alan Lee | JPL | Alan.W.Lee@jpl.nasa.gov |
| C&DH Equipment Lead (Incoming) | David Henriquez | JPL | David.A.Henriquez@jpl.nasa.gov |
| Avionics Simulation and Support Equipment | Jeff Favretto | JPL | jeffrey.a.favretto@jpl.nasa.gov |
| Avionics Integration and Test | Gabriella Garcia | JPL | Gabriella.Garcia@jpl.nasa.gov |
| Telecom | Dave Hansen | JPL | David.M.Hansen@jpl.nasa.gov |
| Thermal | Dan Klein | JPL | Daniel.B.Klein@jpl.nasa.gov |
| GN&C PDM | Sima Lisman | JPL | sima.s.lisman@jpl.nasa.gov |
| GN&C Systems Engineering | Steve Collins | JPL | steven.m.collins@jpl.nasa.gov |
| GN&C Controls Analysis | Daniel Eldred | JPL | daniel.b.eldred@jpl.nasa.gov> |
| GN&C Controls Analysis | Daniel Cervantes | JPL | Daniel.Cervantes@jpl.nasa.gov |
| Materials & Processes | Bryan McEnerney | JPL | Bryan.Mcenerney@jpl.nasa.gov |
| Flight System Testbeds | Kareem Badaruddin | JPL | Kareem.S.Badaruddin@jpl.nasa.gov |
| SSL SEP CHASSIS | Steve Scott | SSL | |
| SEP Chassis Program Manager | Steve Scott | SSL | Steve.Scott@sslmda.com |
| SEP Chassis Deputy Program Manager | Peter Lord | SSL | Peter.Lord@sslmda.com |
| SEP Chassis Systems Engineering Manager | Martin Rahn | SSL | Martin.Rahn@sslmda.com |
| SEP Chassis Business Mgr | Phil Brown | SSL | |
| Finance | Yasir Hanafy | SSL | |
| Government Contracts Manager | Richard Warren | SSL | Richard.Warren@sslmda.com |
| Product Assurance Manager | Ronald Langlais | SSL | Ronald.Langlais@sslmda.com |
| Mechanical Subsystem Engineer | Evan Gomberg | SSL | |
| Power Subsystem | Bao Hoang | SSL | Bao.Hoang@sslmda.com |
| Power Subsystem | Lee Rotlisberger | SSL | Lee.Rotlisberger@sslmda.com |
| Power Subsystem | Zack Pirkl | SSL | Zack.Pirkl@sslmda.com |
| Propulsion Subsystem | Ian Johnson | SSL | |
| Propulsion Subsystem | Giovanni Lenguito | SSL | |
| Thermal Subsystem | Randy Pon | SSL | Randy.Pon@sslmda.com |
| Thermal Subsystem | Jill Norris | SSL | Jill.Norris@sslmda.com |
| Configuration | Viren Patel | SSL | Viren.Patel@sslmda.com |
| Electrical, Telemetry & Command | Victor Moreno | SSL | |
| Mechanical & Structures | Brian Cayton | SSL | Brian.Cayton@sslmda.com |
| | | | |
| Mission System | Robert Mase | | |
| Mission System Manager (acting) | Robert Mase | JPL | Robert.A.Mase@jpl.nasa.gov |
| Mission System Systems Engineer | | | |
| Mission Operations Systems Engineer (MOSE) | Maria Schellpfeffer | JPL | Maria.L.Schellpfeffer@jpl.nasa.gov |
| Science Systems Engineer | Nora Alonge | JPL | Eleanor.J.Kelly@jpl.nasa.gov |

Psyche Team Guidelines

| | | | |
|--|--------------------|-----|-----------------------------------|
| Spacecraft Operations/Operability Engineer | Kristina Larson | JPL | kristina.l.larson@jpl.nasa.gov |
| Mission Interface Manager (MIM) | Stefan Waldherr | JPL | stefan.waldherr@jpl.nasa.gov |
| P&E Systems Engineer | Vic Voskanian | JPL | vicken.voskanian@jpl.nasa.gov |
| | | | |
| Launch Vehicle | Jim Hall | | |
| Psyche LV Mission Manager | Jim Hall | KSC | james.l.hall@nasa.gov |
| Launch Services Coordination | Jonathan Stabb | JPL | Jonathan.Stabb@jpl.nasa.gov |
| | | | |
| Ground System | | | |
| Ground Data System | Marla Thornton | | |
| GDS Systems Engineer | Marla Thornton | JPL | marla.s.thornton@jpl.nasa.gov |
| SOA Programmer | Chris Lawler | JPL | Christopher.R.Lawler@jpl.nasa.gov |
| Spacecraft Operations Software | Kristina Larson | JPL | kristina.l.larson@jpl.nasa.gov |
| Science Data Center | Ernest Cisneros | | |
| Science Data Center Manager | Ernest Cisneros | | ecisneros@asu.edu |
| SDC Systems Engineer | | | |
| | | | |
| Project System Integration & Test | | | |
| ATLO Manager | TBD | JPL | |
| System I&T | Ban Tieu | JPL | ban.l.tieu@jpl.nasa.gov |
| Testbeds | Ken Diaz | JPL | Kenneth.D.Diaz@jpl.nasa.gov |
| Testbeds | Paul Basa | | Paulino.Basa@jpl.nasa.gov |
| Testbed Support | Eric Aguilar | JPL | eric.a.aguilar@jpl.nasa.gov |
| | | | |
| Public Outreach and Communications | | | |
| ASU Media Relations and Marketing Manager | Karin Valentine | ASU | karin.valentine@asu.edu |
| ASU Alumni and Events Coordinator | Stephanee Germaine | ASU | stephanee.germaine@asu.edu |
| Psyche Outreach Coordinator | Courtney O'Connor | JPL | Courtney.M.OConnor@jpl.nasa.gov |
| Psyche Media Rep | DC Agle | JPL | David.C.Agle@jpl.nasa.gov |
| SSL Director of Communications | Wendy Lewis | SSL | Wendy.Lewis@sslmda.com |
| SSL Marketing Communications Specialist | Omar Mahmoud | SSL | Omar.Mahmoud@sslmda.com |
| | | | |
| Mission Design | | | |
| Mission Design Manager | TBD | | |
| Mission Analysis | Greg Whiffen | JPL | Gregory.J.Whiffen@jpl.nasa.gov |
| Mission Analysis | Gregory Lantoine | JPL | Gregory.Lantoine@jpl.nasa.gov |
| Mission Analysis | | | |
| Mission Planning | Dave Seal | JPL | seal@jpl.nasa.gov |
| Mission Planning | Sarah Bairstow | JPL | Sarah.H.Bairstow@jpl.nasa.gov |
| Navigation Design (Acting) | Don Han | JPL | dongsuk.han@jpl.nasa.gov |

Psyche Team Guidelines

| | | | |
|---|-------------------------|------|------------------------------------|
| Optical Navigation | Nick Mastrodemos | JPL | Nickolaos.Mastrodemos@jpl.nasa.gov |
| | | | |
| NASA Headquarters (HQ) | | | |
| Psyche Program Executive (PE) | Dianne Brown | HQ | dbrown@nasa.gov |
| Psyche Program Scientist (PS) | Sarah Noble | HQ | sarah.noble-1@nasa.gov |
| Discovery Program Scientist | Michael New | HQ | michael.h.new@nasa.gov |
| Discovery Deputy Program Scientist | Jared Leisner | HQ | jared.s.leisner@nasa.gov |
| PSD Lead Communications Specialist | Laurie Cantillo | HQ | laura.l.cantillo@nasa.gov |
| NASA's Social Media Manager | John Yembrick | HQ | john.yembrick@nasa.gov |
| NASA Social Media | Jason Townsend | HQ | jason.c.townsend@nasa.gov |
| HQ Cost Analyst (CADRe) | Eric Plumer | HQ | eric.plumer-1@nasa.gov |
| SMD GAO Audit Liaison (OCFO-SID) | David Walters | HQ | david.c.walters@nasa.gov |
| SMD GAO Audit Liaison (OCFO) | Peter Meister | HQ | peter.g.meister@nasa.gov |
| | | | |
| Planetary Mission Program Office (MSFC) | | | |
| Psyche Mission Manager | Belinda Wright | MSFC | belinda.m.wright@nasa.gov |
| PMPO Manager | Allen Bacskey | MSFC | allen.bacskey@nasa.gov |
| PMPO Deputy Manager | Brian Key | MSFC | rodney.b.key@nasa.gov |
| PMPO Business Manager | Donna Patterson | MSFC | donna.k.patterson@nasa.gov |
| PMPO Program Analyst | Brandy Walker | MSFC | brandy.m.walker@nasa.gov |
| PMPO Chief Engineer | Keith Dill | MSFC | keith.dill@nasa.gov |
| PMPO Deputy Chief Engineer | Jay Kissell | MSFC | james.b.kissell@nasa.gov |
| PMPO SMA Lead | Mike Giuntini | MSFC | michael.e.giuntini@nasa.gov |
| PMPO Management Support Assistant | Sandra Nixon | MSFC | sandra.a.nixon@nasa.gov |
| | | | |
| Arizona State University (ASU) | | | |
| ASU Executive Vice President, Knowledge Enterprise, Chief Research and Innovation Officer | Sethuraman Panchanathan | ASU | |
| ASU Vice President for Research Development | Elizabeth Cantwell | ASU | |
| ASU Associate Vice President, Operations and Chief Operating Officer, Biodesign Institute | Tamara Deuser | ASU | Tamara.Deuser@asu.edu |
| ASU Grant + Contract Officer | Michael Fitzgerald | ASU | Michael.B.Fitzgerald@asu.edu |
| SESE Director of Research and Operations | Teresa Robinette | ASU | teresa.robinette@asu.edu |
| Asst. to the Director SESE | Cami Skiba | ASU | Camelia.Skiba@asu.edu |
| Accountant Assoc | Stephanie Holaday | ASU | sholaday@asu.edu |
| | | | |
| Jet Propulsion Laboratory (JPL) | | | |
| JPL Lab Director | Mike Watkins | JPL | Michael.M.Watkins@jpl.nasa.gov |
| Director For Solar System Exploration (SSED) | Jakob Van Zyl | JPL | jakob.j.vanzyl@jpl.nasa.gov |

Psyche Team Guidelines

| | | | |
|---|-------------------|-----|-----------------------------------|
| Deputy Director For Solar System Exploration | Keyur Patel | JPL | keyur.c.patel@jpl.nasa.gov |
| SSED Chief Engineer | Gentry Lee | JPL | b.g.lee@jpl.nasa.gov |
| Engineering & Science Directorate (ESD) | Greg Garner | JPL | Gregory.J.Garner@jpl.nasa.gov |
| JPL Import Export Control Licensing Officer | Glenn Ishikawa | JPL | Glenn.I.Ishikawa@jpl.nasa.gov |
| JPL Public Engagement Office | Alice Wessen | JPL | Alice.S.Wessen@jpl.nasa.gov |
| JPL Media Relations Manager | Veronica McGregor | JPL | Veronica.C.Mcgregor@jpl.nasa.gov |
| JPL Press Office | Jane Platt | JPL | Jane.Platt@jpl.nasa.gov |
| JPL Social Media | Stephanie Smith | JPL | Stephanie.L.Smith@jpl.nasa.gov |
| JPL Web Hosting | Jon Nelson | JPL | Jon.D.Nelson@jpl.nasa.gov |
| JPL GAO Audit Liaison | Dale Roberts | JPL | dale.a.roberts-owens@jpl.nasa.gov |
| | | | |
| Space System Loral (SSL) | | | |
| MAXAR CEO | Howard Lance | SSL | |
| President SSL Government Systems | Richard White | SSL | |
| Senior Vice President SSL Program Management | David Bernstein | SSL | |
| SSL Executive Vice President, Engineering and Operations | Paul Estey | SSL | Paul.Estey@sslmda.com |
| SSL CTO, and Vice President of Product Strategy and Development | Matteo Genna | SSL | Matteo.Genna@sslmda.com |
| SSL Vice President of Civil and DoD Business | Al Tadros | SSL | Alfred.Tadros@sslmda.com |
| SSL S/C Sys Eng Exec Director | Frank Pelkofer | SSL | Frank.Pelkofer@sslmda.com |
| SSL Sr. Executive Director, Advanced Development and Innovation | Donna Potter | SSL | Donna.Potter@sslmda.com |
| SSL Director of Communications | Wendy Lewis | SSL | Wendy.Lewis@sslmda.com |
| SSL Marketing Communications Specialist | Omar Mahmoud | SSL | Omar.Mahmoud@sslmda.com |
| | | | |
| Kennedy Space Center (KSC) | | | |
| Psyche LV Mission Manager | Jim Hall | KSC | james.l.hall@nasa.gov |
| KSC LV Manager | Albert Sierra | KSC | Adalberto.Sierra-1@ksc.nasa.gov |
| KSC LV Business Office | Kenneth Carr | KSC | |

Appendix B. Acronyms

APL – Applied Physics Laboratory

ASU – Arizona State University

Co-Is - Co-Investigators

DSN – Deep Space Network

DSOC - Deep Space Optical Communications

DMP – Data Management Plan

DLR – Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)

DPI – Deputy Principle Investigator

GRC – Glenn Research Center

GRNS - Gamma-Ray and Neutron Spectrometer

HQ - Headquarters

IAU – International Astronomical Union

JPL – Jet Propulsion Laboratory

KSC – Kennedy Space Center

LLNL – Lawrence Livermore National Laboratory

MIT – Massachusetts Institute of Technology

MSFC – Marshall Space Flight Center

MSSS – Malin Space Science Systems

OCA – Observatoire de la Côte d'Azur (The Côte d'Azur Observatory)

PI – Principle Investigator

PLRA - Program Level Requirements Appendix

PMPO - Planetary Missions Program Office

PS – Project Scientist, Program Scientist, or Participating Scientist

PSD – Planetary Science Division

PSI – Planetary Sciences Institute

PSP – Participating Scientist Program

SMD – Science Mission Directorate

SSL – Space Systems Loral

SwRI – Southwest Research Institute

UCLA – University of California Los Angeles

USGS – United States Geological Survey